‘’EFFECTS OF CHANGES IN THE RATES OF VALUE ADDED TAX ON VAT REVENUE IN GHANA FROM 2003 TO 2010’’

By

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DECLARATION

I hereby declare that this submission is my own work towards the MBA and that to the best of my knowledge , it contain no material previously published by another person or material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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Dean, IDL

DEDICATION

I dedicate this thesis to my dear wife, Abigail Adwoa Nartey, whose prayers, love, endurance and encouragement inspired me throughout my study. She took care of the children when I was always away on weekends. Also to my two sons Ariel Adamtey Nartey and Julian Adamnor Nartey for enduring my absence on weekends and in the evenings when I was always away from home.

ABSTRACT

One of the critical activities of any government is the raising of revenue to achieve fiscal policy objectives of matching expenditure to the revenue and reducing budget deficit. Most of these revenues are raised through taxes. The most viable of which is indirect tax which include VAT. The Value Added Tax was introduced in March 1995, but had to be withdrawn barely after three months of operations as a result of public outcry against the tax. It was however reintroduced in December 1998 after intensive consultation and repackaging. Since then, the VAT has contributed a lot to government total tax revenue. This improvement in revenue has made successive governments increase the VAT rate from the initial 10% to 12.5% and then to 15% which pertains now.

The main purpose of this research was to investigate the effects of the changes in the VAT rates on VAT revenue. The researcher used ARDL cointegration procedure to analyse the effect of changes in the VAT rate on VAT revenue in Ghana. The study revealed that changes in the VAT rates have not had any significant effect on the VAT revenue. Rather, government expenditure and improvement in GDP had a more significant impact on the VAT revenue, even though the tax buoyancy was generally low and this is attributed to lapses in the tax system in Ghana.

Based on the findings of this study, recommendations have been made and it is expected to serve as a guide to management of the VAT Service, policy makers and other stakeholders in tax revenue mobilisation.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The issues of taxes are of paramount importance to every government. This is because the success or failure of every government depends on its ability to undertake development projects and improve on the life of its people. Governments therefore need to raise enough revenue to meet these commitments. The primary purpose of tax is to collect revenue to finance government expenditure, Vermeed W, Ploeg R; and Timmer J. W. (2008) Therefore there is always the need to mobilise more revenue in order to achieve fiscal policy objectives of matching expenditure and reducing budget deficit.

Taxes being one of the major sources of government revenue have undergone series of reforms all in attempt to increase revenue. One of these reforms is the introduction of Value Added Tax (VAT). VAT is an indirect tax that is imposed on goods and services. In other words it is a consumption tax which is paid by the final consumer of the product or the service. In the administration of VAT, the collection starts from the producer through to the end user. At each stage, the value that is added to the product is taxed until the goods or service gets to the end user.

According to Mikesell (1999), VAT applies to value-added at each stage of production and distribution. He asserts that value added by any firm equals the difference between the firm's sales and its purchases of inputs from other firms. Ebril L, Keen M, and Bodin, L (2002) also stated that Value Added Tax is defined as a tax applied on the value which is added to goods and services at each stage in the production and distribution chain. According to Ebril et al

(2002), the defining feature of VAT is that it sets off taxes paid by enterprises on their material inputs against the taxes they must levy on their own sales.

Many countries including Ghana have used the VAT as a major source of government revenue. Teffera (2004) estimated that more than 156 countries relied on VAT as the major source of Government revenue.

Historically, the introduction of VAT can be traced back to the late 1940s. According to Microsoft Encarta (2009), even though the idea about VAT was first conceived by a German businessman in the 1920s, France was the first country in the world to implement Valued Added Tax (VAT) in the year 1948. Since then, it has been adopted as the main form of indirect taxation by many countries in different parts of the world and at different stages of economic development. In particular, the VAT has become a common form of taxation for the member states of the European Union (Williams 1996).

Notwithstanding the widespread use of VAT for revenue mobilization, there is no uniformity in the administration of VAT system across countries. Some countries have used a uniform rate for VAT across all sectors while others have used different rates for different sectors and products. Some governments have also resorted to increasing the tax rates over time to raise more revenue others too have maintain static rate.

In Ghana, the VAT was first introduced on the 1st March 1995 by the VAT Act, 1994(Act 486) as part of the Tax Reform Programmes which began in 1993. It was however suspended three months later after implementation by the Government in response to a general public outcry against high inflation. In 1998 the VAT was reintroduced under the Value Added Tax Regulation, 1998(LI 1646) to replace sales and service taxes previously administered by Customs Excise and Preventive Service (CEPS) and Internal Revenue Service (IRS) respectively. Accordingly, a new ACT (ACT 546 of 1998) was enacted to make the tax

operational in Ghana beginning from December 1998 with a rate of 10% instead of the initial 17.5% that was proposed in 1994 and implemented in March 1995. The VAT system in Ghana is administered by the Value Added Tax Service and the Custom Excise and Preventive Service (CEPS) which is responsible for collecting the VAT on imports. Now the domestic tax division which is made up of VAT and IRS are responsible for the collection of Domestic VAT after the integration. Over the past thirteen (13) years that VAT has been operational, there have been a couple of upward reviews in the uniform rates charge. It started from 10% and is currently at 15% .

In view of the increasing number of countries using VAT as a way of collecting indirect taxes and the potential of increasing revenue generation, it has become necessary for a research work to be conducted on VAT revenue collection and its related issues. Many researchers have thus shown interest in conducting research on VAT revenue collections for countries over the period. Most of these researches focus on the importance, problems and coverage of VAT. Very little has been done on the effects of changes in the rates on VAT Revenue.

1.2 Problem Statement

In Ghana the key economic issues that have featured prominently in the national debate in recent times are the general state of the Ghanaian economy, promoting accelerated economic growth and job creation. Central to resolving the above issues is the budget deficit and it's financing. The volume of debt servicing rose from a level of about GH¢3.90 billion in 2000 to GH¢6.90 billion in 2006.With the continuing emphasizes on growth and poverty reduction, government spending stayed above 30% of GDP in 2004 and hit 33.7% of GDP in 2006. (ISSER, 2006).The budget deficit has reached over 14.9% of GDP in 2008(Ghanaian Times January 2009).

The best way to bring this high deficit to an acceptable level is the enforcement of fiscal discipline by reduction in unproductive recurrent expenditure and improvement in revenue collection (2009 Budget Statement of Ghana). Analysis of the tax structure in Ghana shows that the bulk of government revenue comes from indirect tax, with Value Added Tax having the potential of contributing immensely (ISODEC-Ghana 2008). However, more often than not, these revenue institutions fail to achieve their given targets (VAT, 2006)

This problem suggests the need for concrete steps to improve tax revenue collection in order to bring Ghana's fiscal profile to an acceptable level. Since the beginning of the forth republic in Ghana all governments have made several attempts to address this issue leading to a lot of tax reforms, including the introduction of VAT.

The success of VAT made successive governments increase the rates of the tax from 10% to 12.5% in May 2000 with the 2.5% going into the GET Fund and then to 15% in August 2004. The additional 2.5% went into the National Health Insurance Scheme (NHIS) and was called National Health Insurance Levy (NHIL) and a 3% flat rate for retailers, in 2007. All these were in attempt to increase government revenue. The big question is ''Is it the change in the tax rate that is responsible for improvement in tax revenue or there may be other factors?'' this is the question this research seeks to find answer to. The supply side school of thought believes that lower marginal tax rates lead to increase in tax revenue. This they say encourages consumer spending which boost the economy and consequently government revenue. Some analysts on the US economy believe otherwise. To them higher Tax rate generate more revenue to the state for instant the UK proposed to increase the VAT rate 20% effective January 2011 and believe it will rope in additional £13 billion, (UK 2010 budget statement). They believe that higher Tax rates and for that matter VAT rates is able to generate more revenue and hence are against reduction in tax rate as political tools. Example of such analysts are David Cay Johnston and Karen Mulcahy-Small (June 2011) in their

analysis of the US and UK tax systems respectively. Thomas Sowell in his analysis of the US said in a debate on the topic ‘’America, we have a revenue problem’’. Lower tax rates rope in more revenue than higher tax rate in the sense that at low tax rate people are encouraged to work hard and earn more which allows them to spend more leading to more revenue from VAT which is a consumption tax. Most literature on VAT support the fact that VAT rate increase lead to increase in government Tax revenue. It has become necessary therefore to research into this due to the fact that some policy makers may be tempted to propose raising the rate further and further when ever increase in revenue for government is desired, looking at the seemingly increase in revenue from VAT over the years.

1.3 Objectives of the Research

The main objective of this research is to find out if the improvement in VAT collections over the years (2003-2010) were due to the changes in the rates by governments or are due to other factors. To achieve the main objective, the following are the specific objectives:

1. To determine the effect of changes in the VAT rates on VAT revenue
2. To identify other factors that affect VAT revenue

1.4 Research Questions

The following constitute the research questions to which the research is seeking answers to

- Do changes in the VAT rates affect VAT revenue and GDP?
- What factors affect VAT revenue?
- Does inflation affect tax revenue?

The null hypothesis (H_0): changes VAT rate have significant effect on VAT revenue.The alternative hypothesis (H_1): changes in VAT rates do not have significant effect on VAT revenue.

1.5 Significance of the Study

The findings of this study will serve as a guide to management of the VAT Service especially, to have an idea about the enhancement of the Value Added Tax revenue collection in Ghana and how it can be improved. Policy makers will also be guided on what to turn attention on if revenue from VAT is to be improved. It will also provide the general public information on revenue generated from the VAT and how important it is for them to cooperate with the service to achieve the objective of raising enough revenue for the state. Finally it will contribute to the literature on VAT and serve as a source of reference for further research.

1.6 Organisation of the study

This paper is organised in five chapters. Chapter one provides the background information, problem statement, objectives of the research, research questions and significance of the study. Chapter presents two presents the relevant literature, both theoretical and empirical. Chapter three presents the methodology used for study while chapter four presents the findings and discussions of the results. The last chapter presents the summary, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This Chapter presents the literature review which is organised into theoretical and empirical literature. The theoretical literature focus on examining the theories that explain how changes in tax rates affect tax revenue and VAT in particular and the introduction of VAT in Ghana. The empirical literature on the other hand looks at studies that have been done to identify the factors influencing Tax revenue from changes in VAT rates.

2.1 Theoretical Framework

This research was derived from the model of Ariyo (1997) which was also indicated by (Ijewere 1991 and Ndekwu 1991). In analysing the tax system in Nigeria, Ariyo noted that tax productivity depends on, efficiencies in tax administration and collection, complex legislation and apathy especially on the part of those outside the tax net. He also indicated that opportunities for non-compliance vary with the structure of the economy. This includes; the size of organised structure, the state of the information system in the tax department, the development of the banking system and the role and value of tax officers.

This study also considered the framework of Aizenman and Jinjarak (2008). They noted that collection efficiency of Value Added Tax is determined by political and structural considerations. The political consideration includes polarization and political instability. With the structural factors they considered among other things, urbanisation level, the share of agricultural and trade openness. On the political issues no significance was given to the changes in the Tax Rates. If that is the case, why are governments persistently varying the tax (VAT) rates? The researcher used both primary and secondary sources of data in this study.

The supply side school of thought believes that lower marginal tax rates lead to increase in tax revenue. This they say encourages consumer spending which boost the economy and consequently government revenue. Some analysts on the US economy believe otherwise. To them higher Tax rate generate more revenue to the state for instance the UK proposed to increase the VAT rate to 20% effective January 2011 and believe it will rope in additional £13 billion, (UK 2010 budget statement). They believe that higher Tax rates and for that matter VAT rates is able to generate more revenue and hence are against reduction in tax rate as political tools. Example of such analysts are David Cay Johnston and Karen Mulcahy-Small (June 2011) in their analysis of the US and UK respectively. Thomas Sowell in his analysis of the US said in a debate on the topic ‘’America, we have a revenue problem’’. Lower tax rates rope in more revenue than higher tax rate in the sense that at low tax rate people are encouraged to work hard and earn more which allows them to spend more leading to more revenue from VAT which is a consumption tax. The debate goes on and on. Most literature on VAT support the fact that VAT rate increase lead to increase in government Tax revenue.

2.2 Theoretical Literature

The theory is that a decrease in VAT will lead to a higher VAT yield as consumers will have more confidence and consequently spend more – albeit that it is the consumer currently suffering with less cash to spend!

Good tax policy has a number of interesting side effects. For instance, history tells us that tax revenues grow and "rich" taxpayers pay more tax when marginal tax rates are slashed.

There is also a link between government spending and tax revenue. Government spending increases and the inflation rate lead to adjustments in the VAT rates necessary to obtain the expected VAT revenue required to balance the budget, while at the same time sustaining low

inflation and economic growth. Thus, the rate of inflation is both a result of taxation policies and an indicator of future fiscal policy needs.

Value Added Tax is a primary source of tax revenue in many European and other developed countries. With the exception of the United States, all countries of the Organization for Economic Cooperation and Development (OECD) use a VAT or similar tax on consumer expenditures. Many African countries have also introduced the VAT in the last two decades.

Value-Added Tax was first suggested in Germany by a businessman during the post–World War I period as a replacement to the country's turnover tax. The turnover tax was similar to the value-added tax system but did not provide rebates for the taxes paid at each stage. France was the first country to begin using Value Added Tax to partially replace its own turnover tax system.

However, it was not until 1953 that the Value-Added Tax system was put in place in Europe. In 1967 the Council of European Economic Community (EEC) issued directives for widespread adoption of Value-Added Tax to replace existing turnover taxes and link EEC members with a common tax system. After the directive, countries outside the EEC such as Austria, Sweden, Brazil, Greece, and Peru also adopted some variation of the VAT, either in addition to or as a replacement for their own national tax structures. From 1987 to 1997, Value Added Tax was introduced in many eastern European countries, the former Soviet republics, and Asia. China, Thailand, the Philippines, and Bangladesh all implemented the policy during the mid-1990s. Writing in *Finance and Development,* Ebrill(2002) claimed that "the rapid rise of the value-added tax was the most dramatic-and probably most important-development in taxation in the latter part of the twentieth century, and it still continues.'' Most of the countries that adopted the VAT did so not only to enhance trade but to also help control the persistent budget deficits they were experiencing. The wind of change in the tax

system did not leave Africa behind. African countries like South Africa, Nigeria, Kenya, Lesotho and Ghana were all hooked to the VAT as a result of their affiliation to the IMF.

Analysis of government tax with respect to Value Added Tax in France by Michel (2003) concluded that the introduction of VAT in the country has led to a continuous increase in government total domestic revenue mobilisation over the years. He said this has made France's gross domestic product (GDP) to rise to $1.76 trillion from $1.42 trillion, while per capita income increased to $29,410 in 2003 from $29,089 in the previous year. He further observed that the government revenue target has always been achieved and VAT in particular registering substantial growth over the period.

Teffera (2004), in analysing the implementation of Value Added Tax in Ethiopia stated that Value Added Tax (VAT) has become a major tax instrument worldwide and the global trend to introduce VAT in more countries is continuing. VAT revenue performance and its neutrality and efficiency are also the reasons for superiority of this tax in contrast to other common tax instruments such as the turnover tax (Zeljko & Fareed, 1993). The emerging conventional wisdom, based largely on practice and numerous country case studies, suggests that a single rate of VAT (with the rate between 10 and 20%), with very few exemptions and, therefore, a broad base is superior to a VAT with multiple rates and many exemptions which reduce its base and complicate administration (Teffera 2004).

After evaluating tax reforms in Ethiopia with particular reference to VAT performance, Alemayehu and Abebe (2004), also indicated that VAT revenue collection in Ethiopia has shown a 50% significant growth as compared with the replaced sales tax. They contended that domestic VAT collection contributed 14.9% while that of import VAT collection contributed 27.1% to total revenue collections in the country. To this end, Alemayehu and Abebe attributed the high contribution of import VAT to total VAT collection in the country to seemingly its well checked entry point. VAT is the major part of tax system raising about

one-fourth of the world's tax revenue (Ebrill, Keen, Bochin and Summers 2002). This has been reiterated by Bahl and Bird (2008) as they indicated there is no question that the VAT is now properly considered central to a good tax system in raising revenue in most countries. However, Emran and Stiglitz (2005) cautioned that the welfare gains from a switch to the VAT are questionable in the presence of large informal sector. But this view has been counteracted by Aizenman and Jinjarak (2005) as they indicated that a frequently cited advantage of VAT is the fact that it is collected throughout the production chain and associated with easier enforcement giving it a practical advantage.

Guptal et al(2008) also explained that rising domestic revenue not only creates additional fiscal space for supporting high-priority spending and healthy fiscal conditions, it also allows a country to maintain spending consistent with its policy priorities when aid is phased out. It is worth mentioning that tax administration has come a long way in many developing countries over the last three decades (Bird and Zolt 2007). However, there are still much more left to be done to improve tax productivity (Bird 2008). The fact therefore remains that it is not by accident that most developing countries have also adopted a modern tax system of value added tax (VAT).

Increasing the VAT rate alone cannot be seen as a panacea to improving VAT revenue especially in the developing world economies associated with low incomes, welfare of the populace will greatly be affected given the fact that VAT is regressive in nature and majority of Ghanaians are poor. To mitigate the impact, most necessities like food, clothing and shelter are exempted from the VAT. Addressing the challenges of VAT collection could improve revenue better than increasing the tax rate. This is what this research seeks to find out. Aizenman & Jinjarak (2008) also indicated that the tax efficiency is determined by the probability of audit and by the penalty on underpaying.

2.3 The Development of Taxation in Ghana

In order to appreciate the effects of changes in VAT rates, challenges and problems of VAT collection in Ghana, it is important in this research to review the development of taxation and tax systems in Ghana during the colonial periods and the post colonial period prior to the introduction of VAT as outlined by Kimble, (1963), Boahen, (1975), Buah, (1992) and Terkper, (1994) in their various works on the historical development of taxation in Ghana. Taxation started in the form of custom duty in 1850 during the colonial era. In July 1963, the Income Tax Department was renamed Central Revenue Department to reflect the broad scope of taxes to be collected. In 1975, all the laws were consolidated to the Income Tax Degree, 1975 (SMCDS). Again in 1983, PNDC Law 61 amended portions of the degree including changing the assessment year from 1st July to 30th June to 1st January to 31st December, thus coinciding with the calendar year. From 1943 to 1985, the Department was a civil service department.

In July 1986, government took a decision on structural changes in the Department. The Internal Revenue Service (IRS) Law 1986 (PNDC Law 143) was passed. This law transformed the hitherto Central Revenue Department into a public service organization, the Internal Revenue Service, with its own Board of Directors. Currently, this principal enactment has been replaced with the Internal Revenue Act 2000 (Act 592).

The administrative reforms in Ghana hinged on separating the revenue institutions from the civil service, allowing them to operate autonomously, with the view of ensuring effectiveness and efficiency through enhanced work and employment conditions.

According to Terkper (1994) "The premise for the action is supervision and monitoring of fiscal function in any economy by treasuries or Ministry of Finance (MOF) need not be confused with the sort of physical control that involves the day-to-day or routine operations of revenue institutions"

According to the Revenue Agencies Governing Board Act, Act 588, 2001, three major institutions collect taxes in Ghana, namely: The Internal Revenue Service (IRS), The Customs, Excise and Preventive Service (CEPS) and The Value Added Tax Service (VATS)

The Internal Revenue Service (IRS) is charged with the collection and administration of direct taxes in Ghana.

The Custom Excise and Preventive Service (CEPS) is currently the tax revenue institution that contributes most to the government's consolidated fund. At present CEPS operates under the CEPS Management Law, 1993, PNDC Law 330. Under the CEPS management Law, the Service is tasked to among other things collect the understated taxes: Import Duty, Export Duty, Petroleum Tax, Import Excise, Excise Duty and any other taxes levied on imported and exported goods such as import VAT and NHIL on behalf of VAT Service.

In the year 2009 the government of Ghana merged all the three revenue institutions (CEPS, IRS and VAT) to form the Ghana Revenue Authority (GRA) with IRS and VAT constituting Domestic Tax Revenue Division (DTRD) and the CEPS forming the Custom Division.

There is a commissioner general who heads the GRA. Under him are three other commissioners, the commissioner for Domestic Tax, The Commissioner for CEPS and the Commissioner for Support Services. The offices are organised on the bases of trader type. The large traders are under LTU (Large Taxpayer Unit) the medium size traders are under the Medium Taxpayer Unit and the small taxpayer unit for small scale traders.

Various project committees have been formed to take plan for the implementation of the new system. Officers of the VATS, CUSTOMS and the IRS are being trained to enable them under take the new challenges.

2.4 VAT in Ghana

VAT is a consumption tax on final consumption of goods and services but is collected at stages of production and distribution. The key aspect of VAT is that a registered person

(trader) is to charge the tax on all his/her sales and pay to the government at the end of the month. The trader is to take credit of any VAT paid in the course of his/her business activities and subtract that from the tax collected from client during sales and pay the net to the state.

In October 1992, the government appointed a committee to plan and implement a Value Added Tax to replace the Sales and Service Tax. An Oversight Committee and a Technical Committee was formed. The Oversight Committee was to recommend policy decisions to the Technical Committee. The Technical Committee comprises tax experts drawn from Internal Revenue Service, Customs Excise and Preventive Service and the National Revenue Secretariat.

Upon a thorough preparation, the VAT Project Office in collaboration with the Ministry of Finance and Economic planning on February 28, 1995 issued a press statement on the introduction of VAT on March 1, 1995 (Daily Graphic February 28 1995).

The Tax became operative on March 1st 1995 as a key element in the government's tax Reform Programme. The rate of the tax was fixed at 17.5%.This was subsequent to the passage of the VAT Act 1994 (Act 486) by parliament to guide the operation of the tax.

Barely twenty – four hours after the introduction of the tax, had prices of goods of all kinds shot up at a very fast rate. Surprisingly most of these goods did not fall within the categories of goods affected by the new tax. Following the public outcry against the tax as a result of the astronomical increase in prices of goods and services and the subsequent mass demonstration against the tax in Accra dubbed "Kume Preko"(Kill me at once) match, the Minister of Finance announced the withdrawal of the tax on June 7, 1995 (Daily Graphic June 8, 1995).

A number of factors have been identified as responsible for the failure of the VAT in 1995.These includes; The timing of the introduction of VAT coincided with the "Lean Season" and closely following the February budget which earlier imposed 24% increase in prices of petroleum products, The tax rate which was pegged at 17.5% was seen by the

citizenry to be rather too high and the fractions made VAT inclusive calculation quite cumbersome especially considering the high illiterate population in the Ghanaian Business Community. Weak administration structures; the VAT Project Office itself did not have adequate administrative capacity to rise up to the challenges that the new tax imposed. It was poorly resourced in terms of financial and human capacity. There was not enough education on the public to engender public confidence and earn public support for the new tax.

It should be noted that economic and political factors also contributed to the failure of the tax. The new tax was introduced at a time when the rate of inflation in Ghana was about 45% (World Bank Report: 1995) and also there was no political consensus on the introduction of the new tax as the opposition in parliament antagonised the new tax (Daily Graphic 27th May 1998). This point is supported by Bird (1991) that "taxes in developing countries must be designed to be politically acceptable."

2.5 The Re-introduction of VAT in Ghana

With the failure of the new tax, the stakeholders, politicians, opinion leaders and all that matters had to go back to the drawing board for fresh deliberations on the most effective way to re-introduce the new tax. Seminars were organized by the oversight committee to set the tone and educate stakeholders and the general public about the proposed re-introduction of VAT in Ghana.

Three years after the repeal of the VAT Act, (Act 486 1994) the Oversight Committee, The VAT Project office and other stakeholders in conjunction with the Attorney General's Department drafted the new VAT Bill which was passed into law and gazetted on March 18, 1998. The tax rate this time was fixed at a moderate rate of 10%. The imposition of the tax and actual implementation took effect on 30th December 1998. (VAT News, December 1998)

2.6 Why VAT in Ghana

In the early 1980s, Ghana had reached a stage where there was the urgent need to make bold changes in its tax reforms to improve revenue mobilisation and the overall fiscal health. One of the basic thrust of the Economic Recovery Program (ERP) which was launched in 1983 was to bring changes and tax reforms. Because VAT is a very good revenue raiser (Gillis 1990), it extends over a very broad base covering all goods and services with few exceptions. According to Bird et al (2007), in the face of increasing capital mobility, for developing and transitional economies, the revenue possibilities afforded by the corporate income tax and the global personal income tax are very limited. Thus, the key choice to be made in tax design is between the payroll tax and the VAT. In their view, the VAT is better suited than the payroll tax to tap the informal economy. Over the years the revenue generated from the VAT has been increasing. Yearly target are raised and actual collections also increase. Even in years that the targets are not met actual collection exceeds previous year's collection. Ghana in attempt to increase its revenue from VAT has adopted many strategies including amending the law on exemptions, redefining of some aspects of the ACT and raising the tax rates. The tax rate started with ten percent (10%) in 1998 when it became fully operational, then an additional 2.5% in May 2000 for the GETFUND (Ghana Educational Trust Fund). In August 2004, an additional 2.5% was added. This time the revenue to be raised was to support a National Health Insurance Scheme (NHIS) hence the additional tax was named National Health Insurance Levy (NHIL) thus the current Standard rate stands at 15%. However, in 2007 a 3% flat rate for retailers was introduced. All these changes in the rates were to increase revenue. Many countries have varied rates in attempt to improve revenue. In theory, Value-Added Tax systems with a uniform rate are neutral to all forms of productive input. However, countries across the world have had to modify the VAT system with multiple rates and exemptions to meet political, economic, and social needs. Most nations do not assess any

tax on necessities such as food, medicine, and shelter. And because of the difficulty in computing value added, professional services such as banking and insurance are often exempt. The largest variation from uniform tax rates is the zero tax rates on exports.

2.7 The Mechanics of VAT in other jurisdictions

The basic principles under which VAT operates are not different worldwide. However the administrative systems differ from one country to another. Value Added Tax as it operates in other countries, is briefly explained below:

2.7.1 VAT in the United Kingdom

The Value Added Tax is by far the most important indirect tax in the UK, accounting for around one –half of total indirect tax revenue. It is the third largest source of government revenue. VAT was introduced in the U.K in April 1973 partly as a consequence of the U.K. joining the European Union. It replaces the existing purchases tax. In the U.K, VAT is administered by HM Customs and Excise management Act 1979 (CEMA 1979). Registered Traders file their monthly tax returns using a form called VAT 100.The accounting period is flexible, depending on the business accounting year, most importantly, an arrangement can be made to suit the business regarding when to file its tax returns. However, generally returns submission is quarterly. The U.K VAT is based on the invoicing system. By this system, registered VAT traders are supposed to issue VAT invoices to cover their transactions (Andy Lymer et al, 2001) In the U.K, all businesses whose VAT taxable turnover for the previous 12 months exceeds £68,000 are liable to register for VAT. There are three different rates by which goods and services are treated under the UK VAT System: VAT is charged at a standard rate 20% (effected 4th January 2011), VAT is charged at zero – rate for exports and Exempt goods-no VAT is charged on these categories of goods and services.

2.7.2 VAT in Indonesia

Indonesia introduced VAT in 1985 as part of its tax reforms. The VAT system in Indonesia was imposed at the manufacturer-importer level at a relatively single low rate of 10%. It eliminated the deferential tax treatment of domestically produced and imported goods and it circumvented the "Cascading" effects of the sales tax system by introducing crediting arrangements that ensures that most business inputs were not taxed (World Bank Publication 1991).

Under the Indonesian Value Added Tax system, exports are zero- rated. The applicable rates are 10% on most goods and services. In order to correct the regressive nature of the VAT, additional taxes at the rates of 10% and 20% on certain luxury goods were levied separately from the VAT. However, Prest et al (1985), argued that application of distribution mechanism for low tax on necessities and high tax on luxuries presents an administrative complication of drawing a dividing line between necessities and luxuries.

2.7.3 VAT in South Africa

In South Africa, Marna, Kearney et al (2005) indicated that VAT replaced General Sales Tax (GST) in September 1991.They stated that VAT is effective source of government revenue compared to other tax instruments in South Africa. VAT is the third largest source of government revenues accounting for 14% of total revenue. All persons who make taxable supplies in excess of R1million in any 12-month consecutive period are liable to register with VAT, but a person may also choose to register voluntarily provided that the minimum threshold of R20,000 has been exceeded in the past 12-month period.

The major features of VAT in South Africa as have been identified by Marna et al (2005) are:

VAT was initially introduced at a single standard rate of 10% and later increased to 14% as at the year 2009. The standard rate of VAT is applicable on all local goods and services unless zero rated. Zero- rate for selected pro – poor consumed goods such as Brown bread,

Maize meal, Milk, Rice, unprocessed Vegetables. Zero – rate for export of goods and services.

2.8 Empirical Literature

The inflation rate might reduce real VAT revenues if there is a lag in collection, and this, in turn, might increase the inflation rate needed to finance a given level of government spending (Tanzi, 1977; Mourmouras and Tijerina, 1994). Alternatively, if the projected inflation rate underestimates the realized inflation rate, then real government spending may decline if programmed government spending is fixed in nominal terms, thus reducing the need to collect tax revenues (Cardoso, 1998). In this sense, the effect of inflation rate on fiscal balance depends on whether the effect on revenues is greater or lower than the effect on government spending.

Given that the VAR model explicitly accounts for feedback effects, the authors' interest mainly centres on the potential short-run and long-run impact of changes in the VAT rate and the inflation rate on VAT revenue, in light of the recent debate on the direction of the VAT tax rate and monetary policy in Mexico. The model accounts for the direct and induced economic effects of tax rate changes without imposing restrictions on how the policy variables and economic outcomes are interrelated.In all, the endogeneity of government spending, inflation, VAT revenue, and the VAT rate may be a more important issue in developing economies, given the significant integration between political and economic structures in these countries. The Mexican case is unique in that it allowed one to analyze the connection between these variables during a period of increasing economic opening and fiscal reforms (Maloney and Azevedo, 1995).

Tatiana Slobodnitsky and Lev Drucker (2008) of Ministry of Finance, State Revenue Administration of Israel, did a research on the VAT rates and their impact on the Israeli economy. Their findings revealed that VAT revenues are highly correlated with the

development of tax base and have high elasticity with regards to VAT rate. They also found that the VAT revenues are "well behaved", especial in comparison with the corporate tax proceeds. For example, they estimated VAT revenues / VAT rate cross elasticity to be high.

In periods of VAT rate increase the response is estimated by 91% from the potential, while the response in periods of decreasing VAT rates is 49%. thus an increase in the VAT rate is likely to generate an increase in the VAT revenue than the rate at which revenue will reduce due to decrease in the VAT rate.

Bogeti and Hassan (1993) World Bank paper.pp1-14 also gave a different dimension to the analysis. They studied the use of multiple VAT rates and came out with these conclusions.

Single vrs multiple rates: An empirical study on 34 countries shows that single VAT rates (between 10-20%) with minimal exemptions and hence a broad base is better (in terms of generating revenues) than a system with multiple rates and exemptions which reduces the base and increases compliance costs and administrative work load. Typically, multiple rates help include various social and political objectives into the VAT system which however, are detrimental to revenue generation. The World Bank study recommends that for superior revenue collections, VAT should be levied at one rate on as broad a base as possible. From the findings of Bogetic and co, it can be deduced that multiple rates might have other motives rather than revenue improvement. If for social, political or other reasons than economic then the multiple rates could be recommended. If it is for revenue mobilisation then a single standard rate is preferable.

VAT rates and exemptions: The IMF study on VAT in Russia and other countries of the former Soviet Union indicates that these countries did not see any wide proliferation of tax rates after three years of introduction of VAT.

Charlet and Owens (international Perspective on VAT, 2011) also studied the VAT in the EU countries and made the following conclusions.

They sought to study how EU countries tried to overturn their persistent budget deficits.

Two approaches are used to achieve this. First, countries have increased their VAT rates. Over the past two years across the EU, 12 countries have increased their standard VAT rates. However, the U.K. first lowered its standard VAT rate from 17.5 percent to 15 percent from December 2008 until January 2010. As of January 4, 2011, the standard VAT rate in the U.K. was increased to 20 percent. Those VAT rate increases are usually combined with a reduction of income tax rates.

Over the last two years, seven EU member states cut their corporate income tax rates (Czech Republic, Greece, Hungary, Luxembourg, Slovenia, Sweden, and the U.K.). The increased VAT revenue has also been used by some governments to reduce social security contributions payable by employers or employees (Bulgaria, Hungary, Germany, and Sweden). They conclude that increase in VAT rates lead to increase in government revenue.

David Cashin Takashi Unayama of The University of Michigan and Kobe University studied the temporary effect of change in VAT rate in Japan and came out with these findings several different tests for whether there was a significant reduction in household spending (independent of the intertemporal substitution effects) following implementation of the VAT rate increase. In general, their results suggest that the rate increase did not have a significant impact on real household expenditures, a finding which stands in contrast to the conventional wisdom that the consumption tax rate increase was largely responsible for Japans recession in the late 1990s, but is consistent with the revenue-neutral nature of the tax reform.

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In September 2002, in the face of mediocre economic performance, deteriorating government finances and stagnant investment levels, all due to the political coups of 2000. An increase in VAT rate by 25% was recommended to Fijian policy makers by the IMF as a remedy to Fiji's

problems. Beginning 1 January 2003 all goods and services were levied a VAT rate of 12.5%. Paresh Kumar Narayan used a computable general equilibrium model to examine the economy wide effects of this VAT policy. They found out that while the VAT improves government revenue and brings about a small 0.6% increase in real GDP, it fails to address investment levels.

VAT actually leads to a decline in investments and a reduction in real consumption and national welfare. They also highlight that large amounts of tax revenue were owed to government after the increase in tax rate by 25%.

The coup, in stunning the government and its people, started an economic collapse which resulted from foreign governments and donor agencies putting a moratorium of their development programs in Fiji coupled with trade bans imposed by the Australian and New Zealand trade unions. In all, real investment, which was already poor, stalled; real GDP fell by 2.75%; the current account ballooned to 6.5% of GDP; and the external debt reached 43.8% of GDP in 2001 with the prognosis for 2002 at an alarming 47.4% of GDP . Any percentage over forty is considered unsustainable.

2.9 Conclusion

From the above analysis it could be deduced that increase in the tax VAT rate could impact positively on the GDP but to what extent? Are there not better ways to improve revenue mobilisation than increase in the VAT rates? In Ghana it is observed that the people generally have a negative attitude towards tax payment. Since colonial time, the people have protested against any new tax policies being introduced into the country. It is therefore instructive to understand why there was a massive turn out for a demonstration against the VAT when it was first introduced in Ghana in 1995. Despite these resistances governments have continuously increased the VAT rates to help raise the needed revenue for government

expenditure. But is the VAT rate the problem of low revenue? How significant is the increase in VAT revenue after every change in the tax rates?

A study to investigate the effects of changes in the VAT rate on GDP and the government revenue in Ghana is therefore an exercise worth undertaking.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter looks at the conceptual model of the research developed from literature. It also captures the research designed based on theories. Terms used in the research are also defined in this chapter. The data sources, the models used and the various tests that were used are all analysed in this chapter. Finally the prepositions on which the findings are analysed are also stated in the chapter to give a clear sense of direction to the research.

3.1 The Conceptual model

From the theory and further readings of several literatures, the researcher developed a relationship between the variables embedded within the topics about effects of changes in the tax rates on VAT revenue. VAT revenue in this research is the dependent variable and the independent variables are the tax rates, inflation, and GDP and government expenditure.

3.2 Research Design

Ghauri et al (1995) asserted that research design should be effective in producing the needed information within the constraints put on the researcher such as time, budgetary and skill. The nature of the problem can determine the kind of research strategy to adopt. There are different types of strategies that could be employed in research (Saunders, Lewis and Thornhill 2007) and each of the strategies can be used for exploratory, descriptive and explanatory research (Yin, 2003). In the case of this study, the researcher adopted a descriptive and quantitative research using models. Descriptive research is conducted to identify cause-and-effect relationship among variables where the research problem has already been narrowly defined.

The researcher in the study of the effects of changes in VAT rates on revenue, made use of literature search of books, journals and various articles as guidance towards answering the research questions and used test statistics in testing the hypothesis.

3.3 Operational Definitions

For the purpose of this research the period under consideration for which data has been collected and analysed is 2003 to 2010.

GDP – Gross Domestic Product from 2003 to 2010

VAT Service – Value Added Tax Service of Ghana

LVO - Local VAT Office

VAT Revenue – Domestic VAT and Import VAT (Get Fund and National Health Insurance Levy inclusive)

Tax Revenue – All taxes ie Direct Taxes collected by IRS and indirect Taxes collected by VAT Service and CEPS.

CEPS - Customs Excise and Preventive Service of Ghana

Target – The Revenue estimated to be collected by the VAT Service in a particular year, given by the Ministry of Finance and Economic Planning.

Changes in Tax Rates – Increase or decrease in the percentage rate at which VAT is charged.

Trader – A person or business registered to charge and collect VAT on behalf of the government.

3.4 Research Methodology

The researcher used secondary data in this study. These secondary data were collected from the following sources; library search books, previous studies on the subject, reports, newsletters and yearly diary of the VAT Service, national newspapers, journals, presentations and the internet(to obtain up-to-date information).

3.4.1 Data Collection

The Researcher collected quantitative secondary data for this analysis. Information was gathered from the bank of Ghana, the VAT service, the Ministry of Finance and Economic Planning and Ghana Statistical Service. The researcher wrote to these institutions through the Institute of Distance Learning (IDL) to request for the data on the topic.

3.4.2 Secondary Data

The secondary data collected included:

- VAT revenue collections and the targets set by the government for the period under review.
- GDP figures,
- Inflation rates
- Government expenditure for the period under study
- And total tax revenue.

All these data were in quarterly bases and were used in running the regression. A quarterly data time series from 2003 to 2010 was used. The major text for the final analysis was ARDL.

3.4.3 Propositions

The following propositions served as the guide on this study.

- VAT revenue collection in Ghana has increased significantly because of changes in the tax rates.
- VAT revenue collection has improved because of general improvement in the economy and growth of GDP.
- VAT revenue has improved because of inflation in the country
- VAT revenue has improved because of increase in government spending

3.5 Quantitative Design

The researcher used quantitative methodology. The quantitative data obtained from the various institutions were used to assess the revenue growth of VAT over the period due to changes in the VAT rates. The dependent variable is the tax revenue (VATF), the independent variables are the VAT rate (RATE), inflation (INF), government spending (GOVT) and Gross Domestic Product (GDP).

The researcher used ARDL Cointegration Procedure to analysing the data. The equation is as follows:

$$\Delta LVATF_t = \alpha + \sum_{i=1}^{p} \lambda_{1i} \Delta LVAT_{t-i} + \sum_{i=0}^{q} \lambda_{2i} \Delta LINF_{t-i} + \sum_{i=0}^{r} \lambda_{3i} \Delta LGOVT_{t-i} + \sum_{i=0}^{s} \lambda_{4i} \Delta LRATE_{t-i}$$

$$+ \sum_{i=0}^{t} \lambda_{5i} \Delta LGDP_t + + \delta_1 LVAT_{t-1} + \delta_2 LINF_{t-1} + \delta_3 LGOVT_{t-1} + \delta_4 LRATE_{t-1} + \delta_5 LNGDP_{t-1} + \beta_6 TREND + \varepsilon_t$$

where Δ is a difference operator, p,q,r,s,t represent the lag length on the regression variables and $\boldsymbol{\varepsilon}_t$ is a error term which is assumed to be white noise. The parameters, $\boldsymbol{\lambda}_{mi}$ for m=1, 2, 3,4,5 represent the short run dynamics of the model whereas the long run relationships are given by the δ_s.

The researcher first used the Augmented Dickey Fuller (ADF) unit root test regression to set the maximum lag order based on the Schwartz Criterion before the ARDL. This was also based on the Akaike Information Criterion (AIC) which determined the optimal lag of each variable.

The Unrestricted Error Correction Model (UECM) of econometrics was used to examine the long run relationships between variables in the main model. The relationship was tested using the F-test for the null hypothesis.

Time series diagnostic tests were carried out to ensure that the model satisfies the classical linear regression model assumptions. The diagnostic tests conducted include tests for serial correlation, heteroscedasticity, normality of the disturbance term and functional form misspecification.

CHAPTER FOUR

DATA INTERPRETATION AND ANALYSIS

4.0 Introduction

In this chapter, the researcher presents a detailed analysis and interpretation of the model used and the data findings. To provide a clear understanding, the findings have been presented in tables and graphs by using ARDL Cointegration Procedure. The finding have also been analysed and presented based on the objectives of the study

Table 4.1 STATIONARITY TEST

VARIABLE	**AUGMENTED DICKEY FULLER**
LGDP	-0.7413[0] (0.8214)
D(LGDP)	-5.6443[0]*** (0.0001)
LVAT	-0.808[0] (0.8027)
D(LVAT)	-5.314[0]*** (0.0002)
LGOV	-0.886[0] (0.7792)
D(LGOV)	-5.175[0]*** (0.0002)
LINF	-2.915[2]* (0.0558)
LRATE	-1.920[3] 0.319
D(LRATE)	-5.477[2]*** (0.0001)

*, ** and *** above the test statistics indicate the statistical significance of the test statistics at 10%, 5% and 1 % respectively. Figures in parenthesis are p-values; whiles figures in square brackets are the lags of the ADF unit root test regression. A maximum lag order of 9 was set for the ADF test according to the Schwartz formula for determining the maximum lag order. The number of lags selected for the ADF test was selected automatically based on the Schwartz Criterion.

The results of the ADF unit root test shows that all the variables except inflations are not stationary in levels. They however achieve stationarity after the first difference. Thus whereas inflation (LINF) is integration of order zero [I(0)], government expenditure (LGOV), tax revenue (LTAX), tax rate (LRATE) and gross domestic product (LGDP) are all integrated of order one [I(1)] .

The results of the stationarity tests therefore imply the traditional cointegration tests of Engle Granger and Johansson cannot be applied and that ARDL cointegration approach is the most appropriate.

4.1 ARDL COINTEGRATION PROCEDURE

The ARDL or Bounds Testing co integration procedure is useful in testing the existence of long run relationships between level variables within a multivariate frame work. It involves the following procedure: Testing the long run relationship between the level variables; estimation of the long run coefficients of the variables; and estimation of the short run coefficients of the variables.

4.1.1 Testing The Long Run Relationship Between The Level Variables

The long run relationship among the variables can be expressed as:

$$\Delta LVATF_t = \alpha + \sum_{i=1}^{p} \lambda_{1i} \Delta LVAT_{t-i} + \sum_{i=0}^{q} \lambda_{2i} \Delta LINF_{t-i} + \sum_{i=0}^{r} \lambda_{3i} \Delta LGOVT_{t-i} + \sum_{i=0}^{s} \lambda_{4i} \Delta LRATE_{t-i}$$

$$+ \sum_{i=0}^{t} \lambda_{5i} \Delta LGDP_t + + \delta_1 LVAT_{t-1} + \delta_2 LINF_{t-1} + \delta_3 LGOVT_{t-1} + \delta_4 LRATE_{t-1} + \delta_5 LNGDP_{t-1} + \beta_6 TREND + \varepsilon_t$$

where Δ is a difference operator, *p,q,r,s,t* represent the lag length on the regression variables and ε_t is a error term which is assumed to be white noise. The parameters, λ_{mi} for *m*=1, 2, 3,4,5 represent the short run dynamics of the model whereas the long run relationships are given by the δ_s The ARDL Bounds Test requires the determination of the maximum lag order of the regression variables. Given the study sample size and the number of regressors used in the model, the maximum lag order of the regression variables is set to two. After setting the maximum lag order to two, determination of the optimal number of lags to be introduced in the ARDL model is based on the minimum Akaike Information Criterion (AIC). In determining the optimal lag of each variable in using the Akaike Information Criterion (AIC), the ARDL Bounds Test estimates $(p+1)^k$ regressions, where p is the maximum lag order of the variables and *k* is the number of variables in the model.

The rationale for the Unrestricted Error Correction Model (UECM) of the econometric model is to examine the long run relationships between the variables in the model. In testing for the existence of any long run relationship between the variables, the F test is used to test the joint significance of the coefficients of the lagged level variables. The F –test tests the null hypothesis of no cointegration against the alternative of cointegration. The null hypothesis of no cointegration is given by:

H_0: $\delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = 0$ (No Cointegration)

The null hypothesis of no co- integration is tested against the alternative of co integration given by H_1: $\delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq 0$

The F-test used for testing the null hypothesis assumes an asymptotic non-standard distribution (Pesaran et al., 2001). The F statistic for the cointegration test which is normalized on LVAT is denoted by:

$$F_{LVAT}(LVAT \mid LINF, LRATE, LGDP, LGOVT)$$

The decision rule of the F test depends on the critical values to which it is compared. The critical values however depend on the number of explanatory variables in the model, whether the explanatory variables in the regression model are integrated of order zero or one and also on whether the model contains an intercept, and or trend, or neither (Pesaran et al, 2001). Based on the order of integration of the explanatory variables, two asymptotic critical values are derived: an upper critical value and a lower critical value. The lower critical values are based on the assumption that all the explanatory variables are integrated of order zero, whiles the upper critical values assume that the explanatory variables are integrated of order one (Pesaran et al , 2001). The decision rule for the F test is as follows:

- Reject the Null hypothesis of no co integration if the F statistic is greater than the upper critical value.
- Fail to reject the Null hypothesis of no co integration if the F statistic is lesser than the lower critical value.
- If the F statistic lies between the two critical values, then the decision can only be made if the orders of integration of the underlying explanatory variables are known (Pesaran et al., 2001).

The relevant critical values for the F test was taken from Pesaran et al., (2001) based on Table CI (v), Case V with unrestricted trend and unrestricted intercept, and number of regressors, *K*=5.

The results are depicted in the table below

Table 4.2. F- STATISTICS TEST

K= 5	
Computed ARDL F-Statistic	6.5013
Bounds Tests Critical Values at 1 %	Lower Bound 3.189 Upper Bound 4.329

From the results shown in the table, the computed F statistic (6.5) exceed the upper bound (4.329) implying that the null hypothesis is rejected and thus there is cointegration between tax revenue and the independent variables.

Since cointegration is established, the next stage in the ARDL cointegration procedure is to estimate the long and short run coefficients of the model.

4.2 Diagnostic tests

Time series diagnostic tests are carried out to ensure that the model satisfies the classical linear regression model assumptions. The diagnostic tests conducted include tests for serial correlation, heteroscedasticity, normality of the disturbance term and functional form misspecification.

Table 4.3

Diagnostic Tests

****

*** Test Statistics LM Version F Version

****

*** A:Serial Correlation CHSQ(4)= 16.2823[.003] F(4, 7)= 2.6586[.123]

B:Functional Form CHSQ(1)= 16.7585[.000] F(1, 10)= 16.3634[.002]

C:Normality CHSQ(2)= .20337[.903] Not applicable

D:Heteroscedasticity CHSQ(1)= .40197[.526] F(1, 25)= .37782[.544]

****

***

A:Lagrange multiplier test of residual serial correlation

B:Ramsey's RESET test using the square of the fitted values

C:Based on a test of skewness and kurtosis of residuals

D:Based on the regression of squared residuals on squared fitted values

The null hypothesis of the tests above has no serial correlation, correct functional form, normal distribution and homoskedasticity. Using the F test we reject only the null hypothesis for the functional form. Thus the model does not suffer from serial correlation (autocorrelation) and heteroscedasticity.

4.3 Stability Test

Analyzing the long run model for policy analysis demands a stability test of the coefficients of the model. To assess the stability of the VAT model, the CUSUM (Cumulative Sum) and the CUSUMQ (Cumulative sum of squares) of recursive residuals tests are used . The CUSUM (Cumulative Sum) and the CUSUMQ (Cumulative sum of squares) of recursive residuals tests are depicted in figure 4a and 4b (see appendix)

The figures 4a and 4b (see appendix) show that a stable relationship among the variables owing to the fact that neither CUMSUM nor CUMSUM SQ exceeds the 5% significant level depicted by the boundary lines.

4.4 Discussion of Long Run Results

After establishing model stability and long run relationship among the variables in the tax model, the long run coefficients of the model are derived from the dynamic ARDL(0,0,0,0,0) model. The estimated long run coefficients generated using Microfit 4.1 are displayed in table 4.4.

The long run estimates indicate that only government expenditure (LGOVT) and income (LGDP) have significant long run impact on the VAT revenue in Ghana. Since the variables are expressed in the logs the parameter estimates can be interpreted as elasticities. The coefficient of GDP is referred to as tax buoyancy which shows how a percentage change in income affects tax revenue. In other words it measures automatic response of tax revenue to GDP changes less the discretionary tax changes. In this study the coefficient of LGDP (0.234) is less than one showing that it is inelastic. In other words a percentage change in income results in a less than proportionate change in VAT revenue. This contradicts the works of Twerefou et al (2008) who found higher buoyancy for total tax in Ghana.

The coefficient of government expenditure (LGOVT) is positive and significant, implying that government expenditure significantly determines VAT revenue in the long run. The

coefficient (0.77) is less than one (inelastic) implying that a percentage increase in government expenditure will result in less than percentage increase in VAT revenue in the long run. The positive sign indicates that increasing government expenditure triggers increase in VAT revenue but at smaller rate.

Even though the long run coefficient of the VAT tax rate (LRATE) is positive it is insignificant, implying that in the VAT rate does not have any long run impact on the VAT revenues. Thus changes in the VAT rates do not have any significant impact on the volume of VAT revenues in the long run. Also the result also shows that inflationary dynamics (LINF) does not really have any significant impact on VAT revenues in the long run.

Table 4.4 Estimated Long Run Coefficients using the ARDL Approach

ARDL (0,0,0,0,0) selected based on Schwarz Bayesian Criterion

****

Dependent variable is LVAT

27 observations used for estimation from 2004Q2 to 2010Q4

****

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
LRATE	.81190	.64188	1.2649[.220]
LGOVT	.77177	.10592	7.2865[.000]
LGDP	.23467	.11525	2.0361[.055]
LINF	.11100	.11026	1.0067[.326]
INPT	-.52895	1.3026	-.40609[.689]
TREND	-.0080960	.0080014	-1.0118[.323]

****

*,**,*** represents significant levels of 10%, 5%, and 1% respectively. INPT and TREND are parameter estimates for intercept and trend respectively.

4.5 Estimation and discussion of short run coefficients

After establishing the long run relationship between the variables and estimating the long run coefficients, the final stage in the ARDL Bounds testing procedure entails determination of the short run dynamics associated with the long run estimates of the variables in the model. This is achieved by estimating the Error Correction Model (ECM) representation of the ARDL (0,0,0,0,0).

From the short run dynamic of the model in Table 4.5 it can be observed that consistent with the long run results, all the short run coefficients of the regressors achieve the same signs as their long run coefficients. The short run dynamics indicate a 1% increase (decrease) in government expenditure (LGOV) will result in a 77% increase (decrease) in VAT revenue and is statisitically significant at 1%. Likewise the short run dynamics indicate that a 1% increase (decrease) in income (LGDP) will result in a 23% increase (decrease) in VAT revenue and is significant at 10%. The short run estimates of the VAT rate though consistent with a positive sign is insignificant confirming the estimates in the long run and implying that the VAT rates does not have neither short nor long run impact on the VAT revenue. In other words, variations in the VAT revenue are exogenous of the changes in the VAT rates. This can be attributed to the fact that during the study period there has not been any significant change in the tax rates. Interestingly the coefficient of the lagged error correction term is equal to -1, implying that is that in each time period, approximately 100% of shocks can be justified as a long run trend (Afzal et al., 2010). It further implies that deviations in VAT revenue from equilibrium are corrected 100% within a given year.

TABLE 4.5 SCHWARZ BAYESIAN CRITERION

Error Correction Representation for the Selected ARDL Model

ARDL(0,0,0,0,0) selected based on Schwarz Bayesian Criterion

****

Dependent variable is dLVAT

****

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
dLRATE	.81190	.64188	1.2649[.220]
dLGOVT	.77177	.10592	7.2865[.000]
dLGDP	.23467	.11525	2.0361[.055]
dLINF	.11100	.11026	1.0067[.326]
dINPT	-.52895	1.3026	-.40609[.689]
dTREND	-.0080960	.0080014	-1.0118[.324]
ecm(-1)	-1.0000	0.00	*NONE*

****

List of additional temporary variables created:

dLVAT = LVAT-LVAT(-1)

dLRATE = LRATE-LRATE(-1)

dLGOVT = LGOVT-LGOVT(-1)

dLGDP = LGDP-LGDP(-1)

dLINF = LINF-LINF(-1)

dINPT = INPT-INPT(-1)

dTREND = TREND-TREND(-1)

ecm = LVAT -.81190*LRATE -.77177*LGOVT -.23467*LGDP -.11100*LINF +

.52895*INPT + .0080960*TREND

****

R-Squared .98477 R-Bar-Squared .98114

S.E. of Regression .12372 F-stat. F(6, 20) 226.2847[.000]

Mean of Dependent Variable .23326 S.D. of Dependent Variable .90093

Residual Sum of Squares .32144 Equation Log-likelihood 21.5041

Akaike Info. Criterion 15.5041 Schwarz Bayesian Criterion 11.6166

DW-statistic 2.5120

****

R-Squared and R-Bar-Squared measures refer to the dependent variable

dLVAT and in cases where the error correction model is highly

restricted, these measures could become negative.

The research results and findings discussed above show that changes in VAT rates do not have any significant effect on VAT revenue; rather changes in government expenditure and GDP have significant effects on VAT revenue. The null hypothesis that changes in VAT rate have significant effect on VAT revenue is therefore rejected.

CHAPTER FIVE

CONCLUSION, RECOMMENDATIONS AND SUGGESTION FOR FURTHER RESEARCH.

5.0 Introduction

The research problem of this study was the persistent budget deficit of the government of Ghana and the need to reduce this high deficit to an acceptable level if not to eliminate it. The research was focussed on how governments increase the VAT rate in attempt to improve domestic revenue mobilisation. But the question was whether increasing the VAT rate was the main reason why VAT revenue was seen to be improving. The research sought to find out the effects of these increases in the VAT rate on the VAT revenue. To see if the improvement in the VAT revenue is due to other factors apart from the changes in the VAT rates. In order to answer these questions the researcher adopted a quantitative analysis through the use of models. This chapter looks at the conclusions drawn from the research, recommendations and areas for further research.

5.1 Conclusion

The long run estimates indicate that only government expenditure (LGOVT) and income (LGDP) have significant long run impact on the VAT revenue in Ghana.

A percentage change in income results in a less than proportionate change in VAT revenue.

This contradicts the works of Twerefou et al (2008) who found higher buoyancy for total tax in Ghana.

The relationship between government expenditure and VAT revenue is also positive.

The coefficient of government expenditure (LGOVT) is positive and significant, implying that government expenditure significantly determines VAT revenue in the long run.

A percentage increase in government expenditure will result in less than a percentage increase in VAT revenue in the long run.

The positive sign indicates that increasing government expenditure triggers increase in VAT revenue but at smaller rate.

Even though the long run coefficient of the VAT tax rate (LRATE) is positive it is insignificant, implying that the VAT rate does not have any significant long run impact on the VAT revenues. Also the result also shows that inflationary dynamics (LINF) does not really have any significant impact on VAT revenues in the long run.

The short run regression also give the same result of significant positive relationship between GDP and Government Expenditure and VAT revenue whiles VAT rate and inflation have an insignificant relationship with VAT revenue.

The insignificant effect of the changes in VAT rate on the VAT revenue could be attributed to a lot of loopholes in the tax system in Ghana. The tax base is narrow leaving a lot of people outside the tax net. Many businesses are not registered. It also confirm the study in Japan which indicated that consumers reduced their demand for durable goods when there was an increase in the VAT rate from 3% to 5%. But contradict the study in Mexico, Israel and UK where VAT revenue goes up at an increase in the VAT rate. The Fiji experience also point to the fact that increase or decrease in the VAT rate must have other macroeconomic factors to facilitate its desired impact. The VAT service must also try to robe in all qualified traders to register and collect and account for the tax. Enforcement of the Law must also be intensified to get a change in the VAT rate yield the desired result.

5.2 Recommendations

Based on the result of this research the suggestion is that government must have a critical look at the tax administration system to help the tax institutions perform their responsibilities well.

The VAT Service must improve on its revenue mobilisation effort since there are a lot of people outside the tax net.

According to the literature and consultation with the tax experts indirect taxes have greater potentials to improve domestic revenue than the direct taxes therefore government must resource the institutions involved in the administering of these taxes to enable them perform to their optimum capacities.

Another recommendation is that there should be a deliberate effort to educate the general public on their tax obligations. It is final consumers who pay the tax as they buy or request for a service. Most people show apathy towards tax payment and do not even demand VAT invoices when they buy a product or consume a service.

The tax laws must be tightened to have the desired impact on those who evade. These recommendations are on the bases of the findings that the tax buoyancy has less than unitary elasticity. Government expenditure and GDP should have had elastic buoyancy through the multiplier effect but has an inelastic effect. And this may be attributed to some of the problems stated in the recommendation. The exempt items in the VAT law must also be narrowed. The literature shows an inverse relationship between tax rate and tax revenue where the exempt items are expanded. These will come as a social cost to the people but will have the desired impact on VAT revenue and the persistent deficit of Ghana. Some EU countries have therefore decided to rather mitigate that by reducing Income Tax and Social Security deductions as a welfare package for increase in VAT rates and narrowed exempt items.

5.3 Suggestions for Further Research

This research was focussed on the effects of changes in the VAT rates on VAT revenue in Ghana it has not covered areas like problems of tax mobilisation, what will make a change in the tax rate work effectively, what macroeconomic conditions must prevail to enable a change in VAT rate achieve the desired goal. All these areas are worth researching into. It was also found out in this research that majority of the traders are of the opinion that tax revenue is not used for its intended purpose. A further research is recommended to find out from the consuming public on the effective use of tax revenues and the impact on tax compliance. The researcher therefore recommends a further and more elaborate study on the commitment and willingness of the consuming public in honouring their tax obligations.

REFERENCES

Alemayehu, G.and Abebe, S. (2004), *Evaluation of Taxes and Tax Reforms in Ethiopia,* Addis Ababa, United Nations University.

Aizenman, J. and Jinjarak, Y.(2005). The Collection Efficiency of Value Added Tax: *Theory and International Evidence*. Nanvang, Technological University.

Ariyo, A. (1997), "*Productivity of the Nigerian Tax System":1970-1990*. Department of Economics, University of Ibadan, AERC Research Paper 67, AERC Publication 1997.

Bird, R.M. and Oldman, D. eds. (1975) *Readings in Taxation in Developing Countries.* Baltimore: The Johns Hopkins University Press.

Bird, R.M. and Gendron P. (2007) *The VAT in Developing and Transitional Countries*. Cambridge, Cambridge University press.

Bird, R.M. (2008) *Tax Challenges Facing Developing Countries.* University of Toronto Institute for International Business Working Paper No. 9 March 2008.

Bird, R.M. and Oldman O. (1990) Reading on Taxation in developing countries 4th Edition John Hopkins University Press 1990

Bird, R. M., Casanegra M (1992) *Tax Administration in Developing Countries*. Pp 65-110 Washington DC IMF 1992

Bird, R. M. (2005).*Value Added Taxes in Developing and Transitional Countries:* Lessons and Questions, University of Toronto. Prepared for the First Global International Tax Dialogue Conference on VAT. Rome, March 15-16, 2005

Boating, W. A. (2009). *Improving Tax revenue collection in Ghana, a case study of VAT. MBA* (Maastricht University of Management)

Bogetic, Z. Hassan, M.A. F (1993). *Determinants of Value-Added Tax Revenue, A Cross-Section Analysis,* World Bank, pp 1-14

Church, K.B, Mitchell, P.R, Smith, P.N. & Wallis, K.F.(1993) *Comparative properties of models of the UK economy*. National Institute of Economic Review, Vol. 145, pp 87-107

Duffour, K. The 2009 Budget Statement: Ministry of Finance and Economic Planning, Accra

Ebrill, L. Keen, M., Bodin, J.P and Summers, V. (2002) The Allure of Value Added Tax. *A Quarterly Magazine of the IMF* June 2002, Vol 39, No.2

Emran, M.S. and Stiglitz, J.E. (2005) On Selective Indirect Tax Reforms in Developing Countries. *Journal of Public Economy* Vol.89 Issue 4, April 2005 Pp 599.623.

Friedman, S. (2003) Sending Them a Message: Culture, Tax Collection and Governance in South Africa. *Policy, Issues and Actors,* Vol. 16 No.3 June 2003.

Ghana- Daily Graphic. February 28, 1995. *Introduction of VAT*

Ghana -Daily Graphic June 8, 1995. ‘*’Kume preko demonstration’’*.

Ghana -Daily Graphic, May 27, 1998. ‘*’Opposition reject VAT’’*

Ghauri, P .Gronhaug, K and Kristianslund, I (1995) *Research Methods in Business Studies*: A practical guide, London, Prentice Hall.

Gillis, M; Shoup C.S. and Sicat, G.P. (1990) *Value Added Taxation in Developing countries,* Washington DC: The International Bank for Reconstruction and Developing and the World Bank.

Gupta A.S. (2007) *Determinants of Tax Revenue Efforts in Developing Countries* IMF Working Papers (WP/07/184), Washington DC: IMF

Guptal, S. and Tareq, S.(2008). “Mobilizing Revenue” *A quarterly magazine of the IMF* September 2008, Volume 45, Number 3.IIB.

Howell, Z.H. (2008) Aspects of Inter-jurisdictional Sharing of the Value-Added Tax: *Public Finance Review*, Mar2008, Vol. 36 Issue 2, p147-168, 22p

Ijewere, E.I. and Ndekwu, E.C. (1991), *Productivity of Nigerian Tax system*: African Economic Research Consortium, Nairobi.

Institute of Statistical, Social and Economic Research (ISSER), August 2008 *The State of the Ghanaian Economy* (2007), Publication. University of Ghana, Legon.

Kasipillai, J., Aripin, N. & Amran, A.(2003) The influence of Education on Tax Avoidance and Tax Evasion. *Journal of Tax Research* 2003 Vol 1 No.2 pp 134-146

Kearney, M (2003) Restructuring Value Added Tax in South Africa. *A Computable General Equilibrium Analysis.* October 2003. s.l., s.n.

Kimble, D. (1963), *A Political History of Ghana*: 1850-1920. Oxford University Press, London.

Maloney, F.W and Azevedo, R.R. (1995) *Economic Opening and Fiscal Reforms in Mexico:* Contemporary Economic Policy, IMF. s.l. s.n.

Michel, A. (2003), *Analysis of Government Tax*. Microsoft Encarta Microsoft Corporation.

Microsoft Encarta Encyclopaedia (2009), *Value Added Tax.* USA: Microsoft Corporation

Mikesell, J.L.(1999) *International Experience With Administration of Local Taxes*. Indiana University, Bloomington, Indiana

Paresh, K. N.(2003) Analysis of VAT in Fiji: *RURDS.* Vol.15 No3 November 2003 Department of Economics, Monash University, Victoria Australia.

Pesaran, H. Shin, Y and Smith, R. (2000). *Bound testing approach to the analysis of level relationship.* University of Cambridge, revised-DAE working paper No 9907

Pesaran, H. Shin, Y and Smith, R. (2000) Bound testing approach to the analysis of level relationship. *Journal of applied Econometrics*. 16,289-326

Prest, A.R. and Barr, N.A. (1985) *Public Finance in Theory and Practice:*, Butler and Janner Ltd, London.

Prichard, W. & Bentum, I. (2000) *Taxation and Development in Ghana: Finance, Equity and Accountability.* Institute of Development Studies, University of Sussex. April 2009

Republic of Ghana, Revenue Agencies Governing Board Act, 1998, Act 558. Accra: Ghana Publishing Corporation (Assembly Press).

Republic of Ghana, Revenue Agencies Governing Board Act, 2003, (RAGB, 558) Tema: Ghana Publishing Corporation, 2004.

Republic of Ghana, Internal Revenue Service, PNDCL.143 (1986), Tema: Ghana Publishing Corporation 1986.

Republic of Ghana, Internal Revenue Service Act 592, (2000), Tema: Ghana Publishing Corporation 2002.

Republic of Ghana, Value Added Tax Act 546 (1998) Ghana Publishing Corporation Assembly Press, Accra

Republic of Ghana, National Health Insurance Act, 2003, *Act 650,* Accra: Ghana Publishing Corporation, Assembly Press.

Republic of Ghana, CEPS Law-PNDCL 144 (1996), Tema: Ghana Publishing Corporation 1986

Saunders, M., Lewis, P and Thornhill, A. (2007).*Research Methods for Business Students*, 4th Edition Prentice Hall 2007

Stake, R.(1995). The art of case research. Thousand Oaks, CA: Sage Publications.

Stephanie, J., Khaled, W. and Van der Heijden,B. (2007). *How to write Your MBA Thesis*, Published by Meyer & Meyer media.

Strauss, L. A. and Corbin, M. J. (1990). Basics of Qualitative Research: *Techniques and procedures for developing grounded theory*, 2nd Edition, SAGE Publications, London, UK.

Tanzi, V. and Zee, H. (2000)Tax Policy for Developing Countries *IMF Country Report* (05/220).Washington DC.ECONOMIC ISSUES, NO. 27, March 2001

Tait, A.A. (1988) *Value Added Tax: International Practice and Problems*, Washington DC: International Monetary Fund.

Teffera, A.H. (2004) Assessment on the Value Added Tax Implementation in Ethiopia." A Paper presented to the Second International Conference on the Ethiopian Economy at the United Nations Conference Centre, Addis Ababa/Ethiopia. June 2004

Terpker, S.E (1994), *Ghana Tax Administrative Reforms (1985-1993*) Tax Notes International Vol.8, No.21

Thirsk, Wayne (1991), "Lessons from Tax Reform" Working Papers 576.World Bank Publication

Thuronryi, V. (1996) Tax Law Design and Drafting. International Monetary Fund, Publication Services

Tijerina-Guajardo, J.A and Mourmouras, A (1994) *The evolution of VAT rates and government tax revenue in Mexico.* Western Economic Association International Audience.

VAT News (2006) Vol. 1 No 6, VAT Service PA/I Unit.

VAT News (1999) Vol.1, No.2, May 1999 VAT Service PA/I Unit

VAT News, Vol.1, No.4, December 1999 VAT Service PA/I Unit.

VAT News (2003), Vol. 1 No. 14, VAT Service PA/I Unit.

VAT News (2005), Vol. 1 No. 4, VAT Service PA/I Unit.

VAT Service (2006), *Research Unit Quarterly Report*, (Unpublished)

VAT Service PN.2 (1998), *Why VAT in Ghana*, Accra: Ghana Publishing Corporation (Assembly Press).

Vermeed W, Ploeg R; and Timmer J. W. (2008). Taxes and the Economy: *A survey on the impact of taxes on growth, Employment, Investment, Consumption and the Environment*.

World Bank Pre-Notes, December 2001 Number 61

World Bank Publication, (1991), "Lessons on Tax Reforms."

Yin R. K (1994), Case Study Research Design and Methods. Applied Social Research Methods Series, Volume 5. Sage Publication Inc 1994

WEBSITES

http://en.wikibooks.org/wiki/Taxation_in_the_United_Kingdom/Value_added_tax

Date Accessed 2/01/2011

http://www.hmrc.gov.uk/vat/forms-rates/rates/rates-thresholds.htm#1

Date Accessed 2/02/2011

www.sars.gov.za/home.asp?pid=194

Date Accessed 2/04/2011

www.academon.com/lib/paper/63699

Date Accessed 3/01/2011.

http://allafrica.com/stories/200708031063.html

Date Accessed 29/05/2011

www.imf.org/external/pubs/ft/fandd/2008/06/books.htm.

Date Accessed 21/05/2011

http://unpan1.un.org/intradoc/groups/public/documents/un/unpan006399.pdf.

Date Accessed 03/07/2011

http:// worldnet.princeton.edu/perl/webwu.

Date Accessed 8/05.2011

http://em.wikipedia.org/wiki/VAT.

Date Accessed 7/01/2011

APPENDIX 1: TABLES

Table 4.1. STATIONARITY TEST

VARIABLE	AUGMENTED DICKY FULLER
LGDP	-0.7413[0] (0.8214)
D(LGDP)	-5.6443[0]*** (0.0001)
LVAT	-0.808[0] (0.8027)
D(LVAT)	-5.314[0]*** (0.0002)
LGOV	-0.886[0] (0.7792)
D(LGOV)	-5.175[0]*** (0.0002)
LINF	-2.915[2]* (0.0558)
LRATE	-1.920[3] 0.319
D(LRATE)	-5.477[2]*** (0.0001)

*, ** and *** above the test statistics indicate the statistical significance of the test statistics at 10%, 5% and 1 % respectively. Figures in parenthesis are p-values; whiles figures in square brackets are the lags of the ADF unit root test regression. A maximum lag order of 9 was set for the ADF test according to the Schwartz formula for determining the maximum lag order. The number of lags selected for the ADF test was selected automatically based on the Schwartz Criterion.

Table 2

K= 5	
Computed ARDL F- Statistic	6.5013
Bounds Tests Critical Values at 1 %	Lower Bound 3.189 Upper Bound 4.329

Table 3

Diagnostic Tests

****

Test Statistics LM Version F Version

****

A:Serial Correlation CHSQ(4)= 16.2823[.003] F(4, 7)= 2.6586[.123]

B:Functional Form CHSQ(1)= 16.7585[.000] F(1, 10)= 16.3634[.002]

C:Normality CHSQ(2)= .20337[.903] Not applicable

D:Heteroscedasticity CHSQ(1)= .40197[.526] F(1, 25)= .37782[.544]

****

***

A:Lagrange multiplier test of residual serial correlation

B:Ramsey's RESET test using the square of the fitted values

C:Based on a test of skewness and kurtosis of residuals

D:Based on the regression of squared residuals on squared fitted values

Table 4

Estimated Long Run Coefficients using the ARDL Approach

ARDL (0,0,0,0,0) selected based on Schwarz Bayesian Criterion

****

Dependent variable is LVAT

27 observations used for estimation from 2004Q2 to 2010Q4

****

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
LRATE	.81190	.64188	1.2649[.220]
LGOVT	.77177	.10592	7.2865[.000]
LGDP	.23467	.11525	2.0361[.055]
LINF	.11100	.11026	1.0067[.326]
INPT	-.52895	1.3026	-.40609[.689]
TREND	-.0080960	.0080014	-1.0118[.323]

****

*,**,*** represents significant levels of 10%, 5%, and 1% respectively. INPT and TREND are parameter estimates for intercept and trend respectively.

Table 4.5

Error Correction Representation for the Selected ARDL Model

ARDL(0,0,0,0,0) selected based on Schwarz Bayesian Criterion

****

***

Dependent variable is dLVAT

****

***

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
dLRATE	.81190	.64188	1.2649[.220]
dLGOVT	.77177	.10592	7.2865[.000]
dLGDP	.23467	.11525	2.0361[.055]
dLINF	.11100	.11026	1.0067[.326]
dINPT	-.52895	1.3026	-.40609[.689]
dTREND	-.0080960	.0080014	-1.0118[.324]
ecm(-1)	-1.0000	0.00	*NONE*

APPENDIX 4

Fig. 4.a: CUMSUM

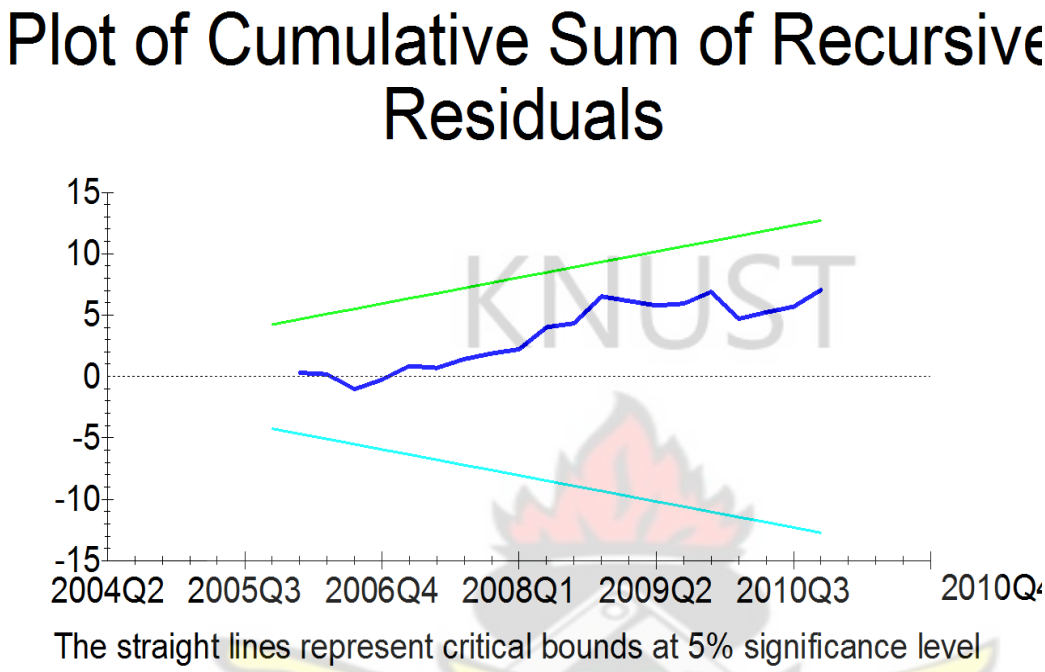

Fig 4.b: CUMSUM SQ